

**RUBIK'S CUBE. THE IMPACT OF  
CONSOLIDATING CLASS IX REPAIR  
PARTS MANAGEMENT, SUPPLY AND  
DISTRIBUTION SYSTEMS AT THE  
STRATEGIC AND OPERATIONAL  
LEVELS IN THE ARMED SERVICES  
UNDER A SINGLE AGENCY**

**A MONOGRAPH  
BY  
Major Franklin D. Roach  
Ordnance**

**School of Advanced Military Studies  
United States Army Command and General Staff  
College  
Fort Leavenworth, Kansas**

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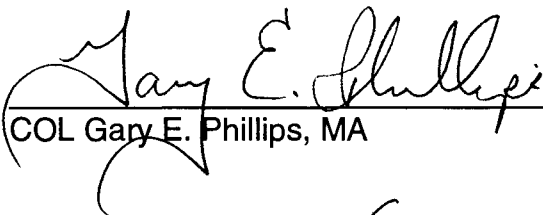
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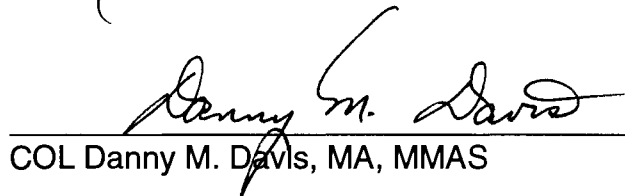
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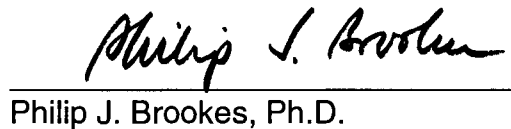
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Approved by:

\_\_\_\_\_  
COL Gary E. Phillips, MA Monograph Director

\_\_\_\_\_  
COL Danny M. Davis, MA, MMAS Director, School of Advanced  
Military Studies

\_\_\_\_\_  
Philip J. Brookes, Ph.D. Director, Graduate Degree  
Program

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## ABSTRACT

RUBIK'S CUBE: THE IMPACT OF CONSOLIDATING CLASS IX REPAIR PARTS MANAGEMENT, SUPPLY AND DISTRIBUTION SYSTEMS AT THE STRATEGIC AND OPERATIONAL LEVELS IN THE ARMED SERVICES UNDER A SINGLE AGENCY by Franklin D. Roach, USA, 44 pages.

Under public pressure to reduce defense spending and a Congressional demand for increased efficiency created by the collapse of the Soviet Union during the early 1990's, the Department of Defense has repeatedly been accused of maintaining unnecessary and expensive inventories of class IX repair parts and logistical infrastructure at the strategic and operational levels. This monograph examines the question: can consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency improve efficiency and effectiveness of the services class IX systems, while providing cost savings in personnel, systems and infrastructure? To accomplish this task, the monograph examines the DoDs and the Armed Services responsibilities for interservice class IX repair parts management, supply and distribution as defined in the Hoover Commission Study, the Defense Logistics Agency, the Combined Logistics Commanders Class IX Repair Parts Programs, DoD regulations and Title 10, United States Code. Then, the monograph explains the individual Armed Services class IX repair parts systems for management, supply and distribution at the strategic and operational levels. Next, the monograph compares and contrasts the similarities and differences between the service doctrinal goals and objectives for their class IX repair parts management, supply and distribution systems at the strategic and operational levels. To further evaluate the concept of consolidation, the monograph uses the Principles of Joint Logistics set forth in Joint Publication 4.0, Doctrine for Logistics Support of Joint Operations, to evaluate the impact of consolidating class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency. Finally, the author recommends consolidation of the Armed Services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency, and provides suggestions for further research in this area.

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# **INTRODUCTION**

## **THE INTERSERVICE LOGISTICS CHALLENGE**

“The world is now undergoing a period of strategic pause... where we have the opportunity to get vision and ideas right, before the rise of a future power adverse to the United States.”<sup>1</sup>

Maj. Gen. Robert Scales, USA, Deputy  
Chief of Staff at the Army's Training and  
Doctrine Command

In 1975, Mathematics Professor Erno Rubik began to review a series of theorems on a simple geometric design called a “cube.” A cube is a simple shape that consists of a regular solid figure contained by six equal square sides or faces.<sup>2</sup> As Professor Rubik began to look at these theorems, he began to take particular notice of the cube's potential to subdivide its shape into equal smaller cube pieces. Through a series of simple designs and mathematical equations, he constructed a cube that had the original six-side configuration. However, each side or face was assigned a different solid color, and each face had three horizontal layers and three vertical columns.<sup>3</sup> Each layer and column can be turned independently. Rubik's Cube is made up of twenty-six smaller cube pieces. These smaller cubes are divided into six stationary center cubes, plus eight corner cubes and twelve edges that move around the center cubes when you twist the faces. Center cubes have one color. Although they can rotate in place, they do not move from one face to another. To solve Rubik's Cube, the player matches other cubes to the center cubes color.<sup>4</sup> Rubik's Cube seems to present a simple task of creating a single six color matching geometric structure from the basic design. However, the simple design of the cube and function creates a deceptively complex problem of unifying the numerous subcomponent cubes



disjointed movements into the single coherent cube. The player's interactions with Rubik's Cube leave them confused and puzzled over the difficulty in solving this simple task.

Like the disjointed movements within Rubik's Cube, the U.S. Department of Defense's (DoD's) seemingly simple task to turn the four solid faces of the Armed Services class IX repair parts management, supply and distribution systems at the strategic and operational levels into a "centered" logistical vision has not worked. Their goal of providing efficient and cost effective interservice class IX repair parts management, supply and distribution at the strategic and operational levels seems caught in a perplexing maze of problems.<sup>5</sup> These problems stem from the numerous subcomponent class IX repair parts logistical management agencies and systems within the individual Armed Services executing class IX repair parts management, supply and distribution operations at the strategic and operational level in a vacuum from the other services. No single agency is currently responsible for the integration of the separate services. This logistical problem has been further exasperated since the 1980's.

## THE PROBLEMS OF MODERNIZATION

During the 1980s and early 1990s, the Armed Services force modernization has resulted in significant inventory growth of class IX repair parts in an effort to support the new weapons systems. With the fall of the Soviet Union in 1989, and the end of the Cold War, changes in U.S. national defense strategy has led to a comprehensive program to reduce the services' class IX repair parts inventories while maintaining readiness.<sup>6</sup> During this post-Cold War era, the DoD budget has declined from over 360 billion dollars to 250 billion dollars (using 1996 constant fiscal year dollars).<sup>7</sup> From this total 1996 budget, an estimated 69.5 billion dollars was maintained in total supply inventory. Of this total DoD inventory, seventy-three percent of the inventory or 50.7 billion dollars was in repairable

class IX repair parts. Repairable class IX repair parts are class IX repair parts that are used, and then returned for repair and subsequently reissued. The other 18.8 billion dollars of inventory consisted of a combination of consumable class IX repair parts and other classes of supply. Consumable class IX repair parts are repair parts that are worn out or depleted during use.<sup>8</sup> The significant costs associated with the management, supply and distribution of class IX repair parts inventories, current budgetary constraints and increased operational use of the Armed Forces, require efficient and effective class IX repair parts systems at the strategic and operational levels.

## STRATEGIC AND OPERATIONAL LOGISTICS

Strategic logistics is defined as a component of the power of a nation. It is composed of the nation's industrial/economic base and the DoD's relationship to the individual Armed Services. Primary responsibility for strategic level logistics lies with the DoD, the individual Armed Services, other governmental agencies, and private corporations. The primary focus of class IX repair parts operations at the strategic level is on class IX repair parts requirement determination, acquisition, propositioning, stockpiling and strategic movement.<sup>9</sup>

Operational level logistical operations involve the linking of tactical requirements to strategic capabilities in order to accomplish operational plans. It encompasses logistical support required to sustain joint/combined campaigns and other military activities within an area of responsibility. Military units augmented by DOD civilians, contractor personnel and available host nation resources, make up the organizational structure of elements found at this level.<sup>10</sup> The primary focus of class IX repair parts operations at the operational level is on the reception, discharge, material movement, movement control, and distribution of class IX repair parts supplies.<sup>11</sup>

The task of insuring interservice cooperation in class IX repair parts management, supply and distribution systems at the strategic and operational levels seems quite simple in terms of supporting the services ends, ways, and means when involved in military operations. Unfortunately, interservice cooperation while seeming to create conditions favorable for each service to gain a synergistic advantage from working together has not been the norm. In fact, since 1941 the services have consistently failed to integrate strategic and operational logistics, to include class IX repair parts management, supply and distribution.<sup>12</sup> Since this time, class IX repair parts management, supply, and distribution for the Armed Services of the United States has been largely conducted by each service component independent of the other services. The limited cooperation between the services that has occurred, has been restricted to crises situations or exchanges between service units, or individual Marines, Sailors, Soldiers and Airmen.

During this period from 1941 until the present, changes recommended from the Hoover Commission Study, the Defense Logistics Agency, the Combined Logistics Commanders' Class IX Repair Parts Programs, DoD regulations and Title 10, United States Code were largely ignored. Other than temporary interservice cooperation, integration in class IX repair parts management, supply and distribution at the strategic and operational levels has been bitterly opposed by the individual services.<sup>13</sup> These "stovepipe" class IX repair parts logistical systems on behalf of each service has created duplication of effort in requesting, storage, handling, issue, and transportation of class IX repair parts.

The current class IX repair parts systems for management, supply and distribution at strategic and operational levels within the individual services while continuing to make improvements in their own service, are still relatively unchanged from their stovepipe World War II predecessors. Problems in Armed Services management, supply, and distribution of

class IX repair parts at the strategic and operational levels demands dramatic improvements in the near future to support new weapons systems and equipment, while maintaining current readiness.

As summed up by the Hon. Jacques S. Gansler, Undersecretary of Defense, Acquisition and Technology:

“The current Armed Services logistical systems costs far too much, takes far too many people, and doesn't provide the desired performance -- in terms of readiness, responsiveness, or sustainment. What's worse, world-class companies, over the last few years, have demonstrated that similar tasks can be done at significantly lower costs, with significantly fewer people, and with dramatically better performance.”<sup>14</sup>

## THE CIVILIAN INDUSTRY SOLUTION

In contrast to the separate Armed Services, through consolidation of inventories and implementation of new management systems in supply and distribution technology, private corporations have dramatically improved efficiency and effectiveness of repair parts supply and distribution operations. Consolidation and technological initiatives in civilian industry have saved billions of dollars in cost avoidance and increased efficiency in repair parts management to include: elimination of manual tracking of repair parts shipments, reduction in on hand inventories of repair parts, reduction of personnel required to store, issue and receipt repair parts inventories, increased reliability of the receipt of the repair parts, and reduced the overall transportation time and cost for shipment of repair parts.<sup>15</sup>

In light of these dramatic repair parts successes by civilian industry, separate service management, supply and distribution of class IX repair parts at the strategic and operational levels are no longer required, cost effective or provide the most efficient support to the warfighter.<sup>16</sup> Consolidation of the Armed Services' class IX repair parts management,

supply and distribution systems at the strategic and operational levels under a single management agency, offers the potential to significantly reduce costs, while improving each services effectiveness and efficiency.

## SUMMARY

This monograph focuses on the potential impact of consolidating the Armed Services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency. Chapter II, defines the DoDs and the Armed Services responsibilities for interservice class IX repair parts management, supply and distribution as defined in the Hoover Commission Study, the Defense Logistics Agency, the Combined Logistics Commanders Class IX Repair Parts Programs, DoD regulations and Title 10, United States Code. Chapter III explains the individual Armed Services class IX repair parts systems for management, supply and distribution at the strategic and operational levels. The author then compares and contrasts the similarities and differences between the service doctrinal goals and objectives for their class IX repair parts management, supply and distribution systems at the strategic and operational levels. Chapter IV uses the Principles of Joint Logistics set forth in Joint Publication 4.0, Doctrine for Logistics Support of Joint Operations, to evaluate the impact of consolidating class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency. Chapter V recommends changes in the Armed Services class IX repair parts management, supply and distribution systems at the strategic and operational levels, and provides suggestions for further research in this area.

## **CHAPTER II**

### **THE HISTORICAL DEVELOPMENT OF INTERSERVICE CLASS IX REPAIR PARTS MANAGEMENT, SUPPLY AND DISTRIBUTION**

“I am not convinced that logistics lessons learned in our recent wars have not become ingrained. Official reports from Saudi Arabia indicate that some of the lessons learned in Vietnam are being ignored and that similar problems continue to plague our forces. This should serve to emphasize the necessity for logisticians to know and understand history. Logistical experience is withering away with time, and current personnel are so busy with peacetime problems that they are not taking the time to review these lessons from the past that form the road map to the future. We need to make history required reading for civilian and military defense officials.”<sup>17</sup>

Lieutenant General (Ret.) Joseph Heiser, in his book A Soldier Supporting Soldiers, describing his experiences in World War II, Korea and Vietnam.

Currently, within the DoD and the Armed Services, confusion exists concerning what specific legislative and regulatory guidance governs interservice management, supply and distribution of class IX repair parts at the strategic and operational levels.<sup>18</sup> During the research of this monograph, numerous officials within the DoD and the Armed Services logistics agencies interviewed by the author could not cite specific legislative and regulatory guidance concerning interservice management, supply and distribution of class IX repair parts at the strategic and operational levels. Most officials interviewed, assumed that Title 10, United States Code (USC), other USCs, specific DoD regulations or DoD agencies either prohibited, or recommended against a centralized system of interservice class IX repair parts management, supply and distribution at the strategic and operational levels.<sup>19</sup> However, this monograph will provide both regulatory guidance and DoD logistical history

since the end of World War II, that clearly shows both of these assumptions are incorrect.

## THE DOD INTERSERVICE LOGISTICAL HISTORY

Shortly after World War II, President Truman assigned a presidential commission led by former President Herbert Hoover to study the feasibility of centralizing a common interservice system for logistical management and financial practices. President Hoover's study recommended centralized management of a common military logistical support system and uniform financial management practices.<sup>20</sup> Based on the results of this commission, the DoD and the services began to study the process for developing an interservice management system to integrate management, supply and distribution of supplies and services at the strategic and operational levels. In 1952, under congressional pressure to institute the Hoover Commission's recommendations, the services established a joint Army-Navy-Air Force Support Center (ANAFSC) to centrally manage common interservice supply items. However, due to intense institutional pressure by the separate services to remain in control of all class IX repair parts management, supply and distribution, the DoD and the services allowed the ANFSC to manage only items defined as "consumables." Consumables are supplies that are not repairable or are consumed in normal use.<sup>21</sup> The military services remained responsible for class IX repair parts management, supply and distribution to support weapon systems and other equipment. From 1954 to 1956, the services assigned consumable management agencies by commodity to the services. The assigned service then became responsible for all the services to contract, forecast, inventory, distribute and manage the inventories for those commodities. The Army managed food and clothing, the Navy managed medical supplies, petroleum, industrial parts, and medical supplies; and the Air Force managed electronic items.

However, the services had still not provided the uniform procedures or integrated management, supply and distribution systems that the Hoover Commission had recommended. Each single-manager service agency operated under its own service procedures, and customers had to develop and use as many sets of procedures as there were commodity managers. By 1961, this lack of interservice integration caused the new Secretary of Defense Robert MacNamara to order the single-manager agencies canceled and all their responsibilities be consolidated into one agency.<sup>22</sup>

### ESTABLISHMENT OF DEFENSE SUPPLY AGENCY

The Secretary of Defense established the Defense Supply Agency (DSA) on October 1, 1961. DSA was assigned the mission of management, supply and distribution of the service supply centers that previously were assigned under the services. Additional duties involved operating other DoD programs and services to include the Federal Supply Catalog, the DoD Surplus Disposal Program and the DoD Industrial Plant Equipment Reserve. Throughout the 1960's and 1970's the DSA continued to expand its role in DOD logistics. New missions included overseas management for wholesale food stocks and bulk fuel stocks and establishment of the Defense Contracting Administration Services for non state-of-the-art weapon systems. The agency was renamed the Defense Logistics Agency in 1979.<sup>23</sup> Further restructuring occurred within the DLA in 1992. Under Secretary of Defense Richard Chaney, all of the service's distribution depots were merged under DLAs management responsibility. However, the Hoover Commissions recommendations for total centralization of a common interservice system for controlling all logistical management, supply, distribution and financial practices have still not been fully implemented. The separate services continue to maintain control over 24 percent of all the national stock numbers (NSNs), 1143, items assigned to DoD.<sup>24</sup> This percentage includes almost all



repairables, and the majority of non-repairable NSNs for class IX repair parts for weapon systems and end item equipment.<sup>25</sup> The development and guidance of the Joint Logistics Commanders (JLC), provides additional historical support to validate attempts to implement an interservice system for class IX repair parts management, supply and distribution at the strategic and operational levels.

## THE JOINT LOGISTICS COMMANDERS

The Joint Logistics Commanders (JLC) were formed on 28 March 1966. Their primary purpose is to improve military effectiveness by identifying and exploiting opportunities for joint service cooperative efforts across the entire spectrum of their command responsibilities.<sup>26</sup> The original JLC group consisted of the Commander of the Army Materiel Command (AMC), Commander of the Naval Material Command (NMC), Commander of Air Force Logistics Command (AFLC), and Commander of Air Force Systems Command (AFSC). The United States Marine Corps (USMC) (DCS/Installations and Logistics) USMC (I&L)) and Director, Defense Logistics Agency (DLA), attended as invited guests. The inactivation of AFLC and AFSC resulted in the integration and activation of the Air Force Materiel Command on 1 July 1992. In 1992 the JLC identified the need to expand the joint aspects of logistics and agreed to include DLA and the USMC as full-time members. Membership now consists of the Commander, AMC; Deputy Chief of Naval Operations (Logistics), Commander, AFMC; Deputy Chief of Staff for Installations and Logistics; and Director, DLA. In addition, the Commanders agreed to include the Director for Logistics, Joint Staff (JS/J-4), as an invited guest. On 13 March 1996, the JLC broadened participation in this forum to include as permanently invited guests: the Deputy Chief of Staff, Army (Logistics); the Deputy Chief, Air Force (Logistics); the Deputy Under Secretary of Defense (Logistics); and, a Naval Systems Commander (air, sea, or space warfare).<sup>27</sup>

## THE JLC CONCEPTS AND GOALS

The JLC developed two broad concepts and eight goals that serve as guides for all JLC activities in support of their established purpose. These concepts and goals include eliminating unnecessary duplication by joint use of personnel, information, intelligence, facilities, equipment, supplies, and services in all cases where military effectiveness and economy of resources will be increased. The second concept is to conform uniform service policies and standardize acquisition concepts, systems design, forms, terminology, and other criteria for the procurement, requisition, storage, transportation, distribution, issue, and maintenance of weapons systems, supplies, and equipment consistent with specialized needs essential to the effective functioning of each service command. The eight JLC goals begin with the goal to improve the readiness and sustainability of U.S. and specified allied combat forces. Second, is the goal to exploit new technologies and strengthen the U.S. defense technological base. The third goal is to foster systems interoperability and the initiation of cooperative development programs early on during the acquisition process. Strengthening the industrial preparedness planning and the capability of the U.S. defense industrial base, organic and commercial, to meet peacetime, surge, and mobilization requirements is the fourth goal of the JLC. Improve workforce productivity across the entire spectrum of the JLC collective responsibilities is the fifth goal. To improve service weapon system quality assurance, reliability, and maintainability is the sixth JLC goal. The seventh goal of the JLC is to achieve defense acquisition improvement program initiatives. The final goal of the JLC is to establish an efficient peacetime logistical support base capable of rapidly transitioning to wartime needs.<sup>28</sup> In 1974, the JLC began to investigate the feasibility of integrating the services class IX repair parts management, supply and distribution systems at the strategic and operational levels.

## DoD MANAGEMENT OBJECTIVE 8

In 1974, the JLCs chartered a Nonconsumable Item Subgroup (NIS) to eliminate unnecessary duplication in the management and logistics support of multiservice nonconsumables, to include repair parts.<sup>29</sup> In support of this study, the Deputy Secretary of Defense issued a Memorandum for the Secretaries of the Military Departments, dated 30 March 1974, DoD Management Objective 8, Action 6: Eliminate Duplicate Wholesale Inventory Management. This memorandum directed the services to support the JLC efforts. Additionally, he provided the services four additional points of guidance. The first point was to insure that no specific service receive piecemeal assignments of material management, supply and distribution functions for service similar items and class IX repair parts. Second, he informed the services that the assignment of material management responsibility to a service or agency will include the functions of computation of replacements, overhaul requirements, budgeting and funding, procurement, receipt, storage and issue, depot level maintenance, cataloging and disposal. Third, any nonconsumable items used by two or more services will be identified and reviewed to determine which service should be the material manager of the item, or to identify any other valid exceptional management arrangement. The fourth and final point was to insure that any assignment of material management responsibility to a service would be weighed heavily in favor of the service that has the largest technical and depot maintenance capability to support the item.<sup>30</sup> In response to the Deputy Secretary of Defense's guidance and the NIS direction, the JLC began work on an interservice class IX repair parts program.

## THE JLC PROGRAM

The JLC program called for a two-phased system to provide for management, supply and distribution of common user interservice class IX class repair parts items. Phase I of the program resulted in assignment of a lead service designated as the Primary Inventory Control

Activity (PICA). Under this phase, the identified PICA service was responsible for specific repair part items. Phase II of this program added some additional responsibilities to the PICA service. These new responsibilities included management, supply and distribution of a single wholesale manager at the strategic and operational levels for each affected depot level repairable and a single wholesale stock for all users.<sup>31</sup> To gain service approval, the JLC program included a services exception to this program for ships, aircraft, weapons systems and other major end items identified by the services.<sup>32</sup> While the JLC program failed to institute a total interservice system for management, supply and distribution of class IX repair parts at the strategic and operational levels, it did allow for the responsibilities of the assigned PICA to reside in a separate item management organization.<sup>33</sup> Additionally, it encouraged all DoD agencies and the services to work within the limits of this program and issue interservice agreements to eliminate duplication associated with multiservice use class IX repair parts. However, this program and the resulting JLC initiatives did not implement prescriptive directives upon services. The only prescriptive directives for the DoD and the services that relate to interservice coordination are found in Title 10 United States Code.

## TITLE 10 UNITED STATES CODE LOGISTICS RESPONSIBILITIES

Title 10 United States Code (USC) was enacted in 1956. Its purpose is to outline laws of a general and permanent nature relating to the military responsibilities within the Armed Forces.<sup>34</sup> Title 10 USC provides guidance to the DoD and the services in Part I - (Organization and General Military Powers) and Part IV - (Service, Supply and Procurement). Part I - (Organization and General Military Powers) of Title 10 USC outlines the following responsibilities to the key officials and agencies within the Department of Defense relating to the management, supply and distribution of class IX repair parts at the strategic and operational levels. The Secretary of Defense provides the authority for

common performance of supply or services when such action would be more effective, economical, or efficient. The Secretary of Defense may provide for the performance of a supply or service activity that is common to more than one military department by a single agency of the Department of Defense. Additionally, his responsibilities include overall supervision of the Office of the Secretary of Defense; which includes the Under Secretary of Defense for Policy, the Under Secretary of Defense for Acquisition and the Assistant Secretary of Defense for Production and Logistics. Together, these agencies determine the DoD strategic requirements and analysis of support capability for repair, overhaul and maintenance of equipment, and supply management.<sup>35</sup>

The Military Departments exercise authority to conduct all affairs of their departments. These affairs include developing and producing weapons, repairing military equipment, and providing the class IX repair parts essential to fulfillment of functions assigned by the Secretary of Defense.<sup>36</sup> Military Services represent the next key agency within the DoD. The services under their departmental secretaries, and the Coast Guard, under the Department of Transportation in peacetime, and the Department of Navy in wartime are responsible for procurement, distribution, supply and maintenance, of equipment, weapons systems and class IX repair parts unless directed by the Secretary of Defense.<sup>37</sup>

Part IV - Service, Supply and Procurement of Title 10 USC outlines the following authority to the Secretary of Defense relating to the management, supply and distribution of class IX repair parts. Section 2202 (Regulations on procurement, production, warehousing, and supply distribution functions), allow the Secretary of Defense to prescribe regulations on performance within the DoD for the procurement, production, warehousing, and supply distribution functions, to include class IX repair parts. Section 2205 (Reimbursements),

allows the DoD to reimburse the amount of funds authorized for supplies to include class IX repair parts furnished between departments and agencies within the DoD.

While Title 10 USC establishes specific authority and guidance to the DoD and the Armed Services in general logistics and financial management areas, it does not prescribe executive agency responsibilities for management, supply and distribution of class IX repair parts for ships, aircraft, weapons systems, and other major end items between the services.<sup>38</sup> Most of the executive agency responsibilities derive only indirectly from the Title 10 USC. Further, Title 10 USC does not restrict the DoD from establishing an interservice management system, or designating an agency to control class IX repair parts management, supply and distribution at the strategic and operational levels.<sup>39</sup> Executive agency responsibilities for functions and services derive from the Department of Defense Memorandum 10-1 down through the service directives 10-1 responsibilities. Having discussed DoD Memorandum 10-1 with a representative at the Policy and Plans Office of the Administrative Assistant to the Secretary of Defense, the author finds that the DoD has not designated an agency responsible to control all class IX repair parts management, supply and distribution at the strategic and operational levels.<sup>40</sup> This lack of executive agency responsibility leaves the services individually responsible for the management, supply and distribution of class IX repair parts for ships, aircraft, weapons systems and other major end items at the strategic and operational levels. Coordination on behalf of the services relies on interservice cooperation to resolve any problems.

## SUMMARY

The historical development outlined in this chapter clearly demonstrate the Executive Agency and the DoD's attempts to establish an interservice agency and supporting systems for all the services logistical management, supply and distribution of class IX repair parts at the strategic and operational levels. However, this process has still

not come to any realization. The original Hoover Commission's findings, the JLC's class IX repair parts programs objectives, DLAs development history, and the authority given to the Secretary of Defense under Title 10 USC, clearly express guidance toward establishing an integrated service management system or agency responsible for all class IX repair parts management, supply and distribution at the strategic and operational levels. The question that must be answered is why have the Armed Services not completed this integration? To clearly understand the reason for the individual service systems for management, supply and distribution of class IX repair parts at the strategic and operational levels, is important to study the service systems.

## **CHAPTER III**

### **THE SERVICES' CLASS IX REPAIR PARTS SYSTEM**

Logistics functions will transition from rigid, vertical organizations of the past to integrated, modular, and specifically tailored combat service support (CSS) packages. Service and defense agencies will work with the civilian sector to take advantage of advanced business practices, distribution processes, materiel management programs, and global networks.<sup>41</sup>

Description of Joint Vision 2010's operational and strategic level logistics systems.

*Imagine that you are on a long distance trip in your new sports car. After several hours of driving you look down to see the engine warning light on your car's dashboard control panel suddenly flashes red. Slowly the car begins to lose power. You begin to scan the road signs for the closest auto dealer from the company that sold you the car. After a few miles, you locate a dealership. Turning into the dealer's service area your car hesitates and sputters until coming to a complete stop near the service areas garage doors. While you move the automatic transmission select lever to park, the engine stops running. You open the car door just as the service manager on duty approaches your car. Leaning toward you, he asks if he can help you. After describing your car's symptoms to him, he calls for a mechanic. The mechanic arrives quickly and begins to diagnose the car's problems. You then move to the waiting room for a cup of coffee. After a few minutes, the service manager returns and informs you that a modular sensor malfunction caused your car's problem. He explains that this sensor controls the timing of the electronic ignition and the car's fuel flow. Fortunately, this part's failure does not damage the car's engine or any of the cars major systems. After breathing a sigh of relief, you ask if he can fix the problem. The service manager replies, "Sure, we can fix it; however, this part is currently out of stock in our service supply." You then ask if there are other company car dealers in town or this area that might have this part in their supply. "No, he replies, but there are some other car dealers within our parent company in this area that might stock the part. However, our company uses a completely different management, supply and distribution system for repair*



*parts than any of our parent company's subsidiary companies. Any transfer of similar repair parts supplies between subsidiary companies is looked upon as bad business and only done when necessary." "That sounds very hard to believe you reply, "in fact that makes no sense at all! Why would a major automobile company not use the same management, supply and distribution system? Would not a unified system provide for more efficient, responsive and cost effective management, supply and distribution of repair parts?" " Well, I do not think so" replies the manager. "Besides our company employs a lot of people in the area, and those people buy cars too; so I guess it all works out in the end for the parent company. "So back to your car," the manager replies. "The best we can do for you is call our supplier and see if he can get the part to us in a few days."*

## THE SERVICE'S CLASS IX REPAIR PARTS SYSTEMS PROBLEMS

This vignette provides a fictitious description of a common operation within the automobile industries wholesale repair parts supply, management and distribution system. When compared to the current Armed Services class IX repair parts management, supply and distribution system at the strategic and operational levels, it bears a striking resemblance. First, the Navy, Army, Marine Corps and Air Force all use a separate service management, supply and distribution system for class IX repair parts at the strategic and operational levels.<sup>42</sup> Second, any transfer of similar class IX repair parts supplies between the services is viewed as bad business between the higher services strategic and operational level supply commands.<sup>43</sup> Additionally, the transfer or reallocation of class IX repair parts is only done when absolutely required, or by soldiers, sailors or airmen making agreements within lower echelons of these commands.<sup>44</sup> Finally, the services fear of loss of funds and jobs is a significant factor in this issue. During the research for this monograph, the author interviewed over forty civilian and military commanders, managers and

- supervisors within the class IX repair parts management, supply and distribution systems in the services at the strategic and operational levels.<sup>45</sup> Throughout the interviews, the author

asked questions concerning their organization's functions. The one question that generated the most lively discussion was the impact of consolidating their organization under a single agency responsible for the management, supply and distribution of all the services class IX repair parts at the strategic and operational levels, including repairables. Like the service manager in the vignette above, thirty-five of the forty persons interviewed mentioned a fear of lost jobs as having to be weighed against the overall effectiveness of consolidating. The remaining five had no comment on the economic job factor. However, they also felt that while consolidation might be a more efficient and effective system, it is bad for the services overall, due to loss of money in the services budgets.<sup>46</sup> Additionally, like the vignette, above finding the repair part was not always a problem. However, getting access to the part was a problem. During the research of this monograph, the author interviewed twelve logistics officers from all services, currently assigned to the Army Command and General Staff Officer Course who have worked with their services class IX repair parts systems at the strategic and operational levels. Each officer provided numerous examples of having to wait for class IX repair parts from their own supply system while like class IX repair parts were shown as available in other services systems.<sup>47</sup> The results of these interviews and the apparent schism between the services demand a closer examination of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels. To explain the service systems, the author will focus on the services doctrinal responsibilities and objectives of their service class IX repair part systems at the strategic and operational levels. However, it is not the author's intent to analyze the specific technologies, hardware or software used to accomplish these systems.

## THE SERVICE CLASS IX REPAIR PARTS SYSTEMS

### THE U.S. ARMY

The supporting U.S. Army class IX repair parts management, supply and distribution systems at the strategic and operational levels are defined by many factors. At the strategic level, the objectives of the class IX repair parts management, supply and distribution systems are to determine strategic level class IX repair parts requirements, acquisition, packaging, management and positioning of class IX repair parts supplies; and the coordination of movement of class IX repair parts into theater base and staging areas.<sup>48</sup> At the operational level, the class IX repair parts systems objectives are to request, receipt, store and maintain class IX repair parts supply levels; and distribute class IX repair parts to the appropriate class IX repair parts supply activity or receiving unit.<sup>49</sup>

At the strategic level, class IX repair parts management, supply and distribution depends on the general classification of the item, instead of the class IX repair parts end item use. This causes class IX repair parts requisitions in support of a unit's maintenance mission to go to more than one National Inventory Control Point (NICP) or commodity command. The NICP or commodity command is then responsible for management, supply and distribution of the particular repair part item as assigned by the Army.<sup>50</sup> Normally, for major systems such as the M1 tank, a program manager is assigned to the system to insure all class IX repair parts for that system are handled through a single NICP manager. For other class IX repair parts not intensively managed or classified as repairables, the U.S. Army has allowed some of these items to be managed by the Defense Logistics Agency (DLA). DLA procures, stores and distributes these items in support of the Army requirements. Support includes direct coordination for class IX repair parts distribution from the strategic level down through the CINC's operational forces. At the strategic level, class

IX repair parts requirements for major systems often require the NICP manager to use depot level maintenance assets to repair unserviceable repairable class IX repair parts to support the supply system requirements.<sup>51</sup> Depot level maintenance assets include fixed depots in CONUS, civilian contractors and host nation support personnel. These assets provide the backbone of the Army's maintenance and repair of repairable class IX repair parts.<sup>52</sup>

At the operational level, management, supply and distribution systems for class IX repair parts focuses on providing class IX repair parts and maintaining the stockage levels within the theater. Item material managers assigned to the theaters and corps are responsible for the management, supply and coordination for movement control of the class IX repair parts within the theater.

## THE U.S. NAVY

Class IX repair parts management, supply and distribution objectives at the strategic and operational levels for the U.S. Navy involves interrelated and often overlapping functions and capabilities. The Naval Supply Systems Command (NAVSUP) is responsible overall for the Navy class IX repair parts supply system management, supply and distribution at the strategic and operational levels.<sup>53</sup> Navy class IX repair parts management, supply, and distribution systems at the strategic level focus on determining total class IX repair parts requirements, acquisition and management of air and sealift for strategic mobility of repair parts to support systems in distant theaters of operations.<sup>54</sup> The Navy objectives for the class IX repair parts system at the strategic level includes sustainment of class IX repair parts for propositioned equipment and materiel both afloat and ashore. Long-term class IX repair parts sustainment is tied directly to the national industrial bases, which include the nation's manufacturing and transportation sectors. A

particular concern for the Navy at the strategic level, is the U.S. industrial bases capability, capacity, and technology required to support timely production of class IX repair parts to support modern weapon systems and equipment to meet wartime requirements.<sup>55</sup> The Navy management, supply and distribution system for class IX repair parts depends on the general classification of the item. It is Navy policy that only one inventory manager will manage a repair part item for supply.<sup>56</sup> All items in the supply system are managed by an Inventory Manager (IM). Navy IMs for class IX repair parts management, supply and distribution include the other program offices, and Navy Inventory Control Point (NAVICP).<sup>57</sup> This separation causes class IX repair parts requisitions in support of a Naval unit's maintenance mission to go to more than one National Inventory Control Point (NICP) or commodity command. The NICP or commodity command is then responsible for management, supply and distribution of the repair part item as assigned by the Navy. Non-Navy IMs include the DLA Inventory Control Points (ICPs) and other services. For major systems such as the F-18 Fighter, a program manager is assigned to the system to insure that all class IX repair parts for that system are handled through a single NICP manager. For other class IX repair parts items not intensively managed or classified as repairables, the U.S. Navy has allowed other agencies to manage and control the management, supply and distribution of these items. Of the over 2.5 million items used by the Navy, only about 18 percent of the items are managed by Navy ICPs, with about 76 percent managed by Defense Logistics Agency (DLA) ICPs. However, the Navy still maintains the management, supply and distribution functions for repairables and a large percentage of the nonconsumable repair parts. Class IX repair parts support includes direct coordination of class IX repair parts from the strategic level down through the Navy's deployed operational forces. At the strategic level, class IX repair parts requirements for major systems often

require the NICP manager to use depot level maintenance assets to repair unserviceable repairable class IX repair parts to support the supply system requirements. Depot level maintenance assets include fixed depots in the CONUS, civilian contractors and host nation support personnel.

Class IX repair parts management, supply and distribution systems objectives at the operational level involve coordination and providing intratheater class IX repair parts stock objectives to operating Naval forces. It includes class IX repair parts support activities required to sustain Naval campaigns and major operations within a theater. Class IX repair parts systems at the operational level include the theater class IX repair parts support bases, maintenance facilities and the theater surface, air, and sealift required to transport the class IX repair parts to the supported forces.

## THE MARINE CORPS

NAVSUP conducts the Marine Corps overall supply system management through inventory control points, Fleet and industrial Supply Centers. However, the Marine Corps Logistics Bases Command provides class IX repair parts management, supply and distribution to include depot level class IX repairable parts.<sup>58</sup> The doctrinal goals of the Marine Corps Logistics Bases Command is to support the Fleet Marine Forces. The Marine Corps class IX repair parts management, supply and distribution systems at the strategic and operational levels are designed specifically for amphibious operations under limited and general war conditions.<sup>59</sup> Class IX repair parts systems in support of Marine Corps at the strategic level involve the management, supply and distribution of class IX repair parts from air and sealift for sustainment of forces in distant theaters of operations. When extended military operations are required, class IX repair parts management, supply and distribution at the strategic level requires extensive interaction with the CONUS sustainment base. The

distribution of these class IX repair parts is controlled by one inventory control point and eight Remote Storage Activities (RSA). The class IX repair parts are acquired from various sources and stocked at these RSAs to ensure timely support of the military effort.<sup>60</sup> For aviation class IX repair parts management, supply and distribution, the Marine Corps uses the Navy's class IX repair parts supply assets and systems.

Class IX repair parts management, supply and distribution objectives at the operational level address sustainment of class IX repair parts stocks within the military theater of operations. The focus of the Marine Corps class IX repair parts system at the operational level is to connect the management, supply and distribution efforts of the strategic level down through the tactical level. These class IX repair parts are then stocked in the theater class IX repair parts supply system to make them available in sufficient quantities to support tactical level operations. Class IX repair parts management, supply and distribution systems at the operational level are designed to sustain weapons systems and equipment used during campaigns and major operations. This is accomplished through two way. First, the systems assist by developing class IX repair parts storage and repair facilities at intermediate and forward support bases. Second, the systems assist by supporting the management and distribution of class IX repair parts as they arrive in the area of operations.<sup>61</sup>

## THE AIR FORCE

Class IX repair parts management, supply and distribution at the strategic and operational levels for the U.S. Air Force has undergone significant changes during the last three years.<sup>62</sup> In response to these changes, the Air Force removed its Air Force Doctrine Document 40, Logistics Doctrine (AFDD 40). AFDD 40 outlined the Air Force's doctrinal objectives for class IX repair parts management, supply and distributions systems at the

strategic and operational levels.<sup>63</sup> The new doctrinal manual that outlines the Air Force's new systems AFDD 2-4 is currently under development. As described by the manual's lead writer, LTC Nate Wilson, of the Air Force Doctrine Command, the new systems used by the Air Force at the strategic and operational levels are in a "transition period." However, the basic doctrinal concepts discussed in the Air Combat Command Instruction 23-150, and in the Logistics Models and Policy Decisions, LOGM 595, Spring 1996, provide adequate resources to describe the Air Force's class IX repair parts management, supply and distribution systems overall doctrinal goals and objectives at the strategic and operational levels.<sup>64</sup> Overall, responsibility for the class IX repair parts management, supply and distribution systems at the strategic and operational levels is the Air Force Material Command.<sup>65</sup> Air Force goals for class IX repair parts management, supply, and distribution systems at the strategic level focus on determining class IX repair parts requirements, and management of class IX repair parts stocks in support of the Standard Base Supply System (SBBS) users at operational level.<sup>66</sup> SBBS is the operational level organization of the Air Force that deals with base users of repair parts.<sup>67</sup> The Air Force class IX repair parts management, supply and distribution systems are based on the classification of the repair part. To provide the Air Force particular repair parts, the Air Force has five depots or Air Logistics Centers (ALCs). All class IX repair parts in the supply system are managed by an item manager (IM). Air Force class IX repair parts management, supply and distribution can include other services if the class IX repair parts is a joint use item. Due to the multiple IMs, class IX repair parts requisitions in support of an Air Force unit's maintenance missions can go to more than one ALC, service or other wholesale sources to include the DLA or civilian contractors. The ALCs, other services, DLA or civilian contractor are then responsible for the management, supply and distribution of the particular repair part as assigned by the Air



Force. Similar to the other services, major systems such as the F-15 Fighter are assigned a program manager to insure that all class IX repair parts for that system are handled through a single inventory control point. At the strategic level, class IX repair parts requirements for major systems often require the program item manager to use depot level maintenance assets to repair unserviceable repairable class IX repair parts to support the supply system requirements. Depot level maintenance assets include one of five ALC depots in CONUS, or a civilian contractor's maintenance facility.<sup>68</sup>

Air Force class IX repair parts management, supply and distribution systems goals at the operational level involve coordinating and providing class IX repair parts support from the SBBS to operating Air Force units.<sup>69</sup> It includes class IX repair parts support activities required to sustain Air Force campaigns and major operations within a theater. Class IX repair parts systems at the operational level consist of SBSS bases, maintenance facilities and the theater surface and air transportation required to move the class IX repair parts to the Air Force units.

## COMPARING THE SERVICES SYSTEMS

In analyzing the goals and objectives of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels, it is apparent that the services have similar goals and objectives. The first area of comparison is in class IX repair parts management. As clearly outlined in each services basic doctrinal concepts, all the services at the strategic level focus on determining class IX repair parts requirements, managing class IX repair parts stocks, positioning of class IX repair parts supplies, and coordinating movement of class IX repair parts into theater level supply facilities. Further, all services use either a civilian or military depot level inventory storage facility to stock and maintain strategic level inventories. Throughout these depots storage

facilities, all the services use IMs to manage and provide asset visibility throughout the services class IX repair parts supply system. At the operational level, the services goals and objectives for management of their class IX repair parts systems are also similar. Each of the services management systems focuses on sustainment of class IX repair parts stocks required at operational level, and for coordination of transportation of repair part stocks to tactical level class IX repair parts supply units in theater.

Supply is the second area of comparison. While the specific details of the hardware, software and architecture of each services repair parts supply system is not discussed in this monograph, each service does use different versions of automated and non-automated supply functions at the strategic and operational levels. However, while these programs are different, all the services share the same doctrinal principle of trying to maximize class IX repair parts availability at the strategic and operational levels as a primary objective. The choice of a specific service set of guidelines, or the type of automation programs used to accomplish the services class IX repair parts supply support remains a service decision.<sup>70</sup>

The final area for comparison between the services class IX repair parts systems is distribution. Each service class IX repair parts distribution system at the strategic and operational levels is conducted in a slightly different manner. Specific distribution systems and methods for each service is designed to support the environmental and operational conditions within which its service conducts strategic and operational missions. Coordination for class IX repair parts packaging, transportation, receipt and storage remains a separate service responsibility unless coordinated through DLA or civilian contractors. However, like the shared doctrinal management and supply systems goals at the strategic and operational levels, the doctrinal concept of distribution by the services demonstrates the same goals and objectives.

## THE GAO FINDINGS

By comparing the doctrinal goals of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels, it is clear that the similarities in the service systems far outweigh the differences. Based on these similarities, consolidation of the services class IX repair parts systems under a single agency is a logical conclusion to improve support and efficiency at the operational and strategic levels. Further, as estimated by the General Accounting Office (GAO), by just consolidating the service depots alone, the DoD would save an estimated 3.5 billion to 6.1 billion dollars over fiscal years 1998 to 2010.<sup>71</sup> Additionally, the GAO noted that potential savings would likely be greater still if the analysis included savings from all business process improvements related to the consolidation and future improvements to services existing material management information systems.<sup>72</sup>

## SUMMARY

While even the services acknowledge that substantial savings efficiency would be gained from consolidation, they continue to resist such proposals by citing potential risks associated with operational effectiveness.<sup>73</sup> To respond to these potential risks, the author interviewed over forty officials from across the services that are involved with class IX repair parts management, supply and distribution systems at the strategic and operational levels. Of those forty officials interviewed by the author concerning the services operational risks, none of these officials cited what this author feels are significant issues to restrict consolidation. However, to explore these issues further, the monograph will use the Joint Principles of Logistics set forth in Joint Publication 4.0, Doctrine of Logistics Support of Joint Operations, to evaluate the services concerns.

## **CHAPTER IV**

### **CONSOLIDATION: THE ANSWER IS?**

“Our Defense Reform Initiatives (DRI) require four major areas. First, the plan calls for the DoD to reengineer its process and procedures. Second, the DRI requires us to consolidate or streamline organizations to remove redundancy and maximize synergy. Third, the DoD must compete, that is apply market incentive for optimizing the performance and the efficiency of DoD support activities and agencies. Finally, the DoD must eliminate excess support structure and focus on core competencies.”<sup>74</sup>

Secretary of Defense William Cohen

### **THE SERVICES RESPONSE TO CONSOLIDATION**

In the 1997 GAO report entitled: Consolidation of the Services Class IX Repair Parts Depot, the services acknowledged that the consolidation would create significant savings in effectiveness and efficiency. However, they disagreed that consolidation was best for the services. The reason cited was that consolidation of these depots created unacceptable risks to the operational effectiveness of the services missions.<sup>75</sup> During the research of this monograph, officials interviewed from the services class IX repair parts management, supply and distribution systems at strategic and operational levels identified the following three items as the services operational risks.

First, the consolidation of the services class IX repair parts management, supply and distribution systems at strategic and operational levels under a single agency will degrade each services responsiveness to their tactical level units requirements for critical class IX repair parts. The services concern is that a single agency will not have the services best interest in mind during operations compared to the services separate systems.

Second, the consolidation of the services class IX repair parts management, supply

and distribution systems at strategic and operational levels under a single agency will create loss of flexibility and a significant economic impact by eliminating those employed in the services separate systems.

Finally, the consolidation of the services class IX repair parts management, supply and distribution systems at strategic and operational levels under a single agency will create loss of sustainability by not allowing the services to sustain the minimum essential class IX repair parts stockage levels to maintain combat readiness. To respond to these issues, the monograph will use the Joint Principles of Logistics set forth in Joint Publication 4.0, Doctrine of Logistics Support of Joint Operations, to evaluate these services concerns. As defined in Joint Publication 4.0, the Principles of Joint Logistics are designed to complement the principles of war. The Principles of Joint Logistics provide a guide for analysis and future planning of logistical plans and operations. Historically, it has been proven that these principles are important for success in strategic and operational level logistical support.<sup>76</sup>

## RESPONSIVENESS

Responsiveness is the first Principle of Joint Logistics. Responsiveness is defined as the ability of a logistical system, plan, or organization to provide the right support in the right place at the right time.<sup>77</sup> Among the logistic principles, responsiveness is the most important principle; all other principles become irrelevant if the logistic system, plan or operation cannot support the concept of operations of the supported commander.<sup>78</sup>

First, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency provides asset visibility of all the services class IX repair parts inventories. Asset visibility, enables all the services class IX item managers the “means” to rapidly query the entire Armed Services supply system at the strategic and operational levels to locate required class IX repair parts.

Based on the repair parts identified inventory location and their geographic proximity to the requesting supply agency, the item manager can then coordinate the most responsive mode of transportation to distribute the part to the requesting unit.

Second, as described by Lieutenant General (Ret.) Joseph Heiser, in his book A Soldier Supporting Soldiers, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels will improve responsiveness by significantly reducing the amount of excess repair parts stocks. Elimination of unnecessary repair parts assets and the associated costs to transport, track, store and issue them, would free these resources for use to acquire the services valid class IX repair parts.<sup>79</sup>

Finally, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will improve responsiveness by eliminating the need for separate hardware and software systems for each services class IX repair parts systems. The elimination of separate service architecture will reduce the amount of time required to process cross service requisitions, coordinate transportation for the repair parts between the services, and eliminate the time required for human interface between item managers in the services.

## SIMPLICITY

Simplicity is the second Principle of Joint Logistics. Simplicity is defined as the reduction of complexity, and often fosters efficiency in both the planning and execution of national and theater logistic operations. Mission-type orders, standardized procedures, and reductions in structure contribute to simplicity.<sup>80</sup> Establishment of priorities and preallocation of supplies and services by the supported unit can simplify logistic support operations.<sup>81</sup>

First, as described in the previous section on responsiveness, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency provides increased asset visibility. This improved visibility while increasing responsiveness, also simplifies the current complex problems of separate systems. By consolidation, the services class IX item managers can easily query the entire Armed Services supply system at the strategic and operational levels to locate required class IX repair parts. Then, the item manager can coordinate the most efficient and effective mode of transportation to distribute the parts to the requesting unit.

Second, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels will simplify the class IX repair parts processes by reducing the amount of excess class IX repair parts stocks and support structures.<sup>82</sup> These unnecessary class IX repair parts, and the support structures required to track, store, issue and distribute them create delays to the services receiving the required parts and add unnecessary complexity within the processes. In his book The Fifth Discipline, author Peter Senge describes the ability to simplify the process, and to reduce delays as keys to leveraging significant, enduring improvements in organizations.<sup>83</sup>

Finally, similarity of the systems created by the consolidation of the services class IX repair parts management, supply and distribution systems under a single agency at the strategic and operational levels will foster simplicity in both the planning and execution of national and theater logistic operations.

## FLEXIBILITY

Flexibility as a Principle of Joint Logistics, is defined as the ability to adapt logistic structures and procedures to changing situations, missions, and concepts of operation. The principle of flexibility includes the concepts of alternative planning, anticipation, reserve

assets, redundancy, forward support of phased logistics, and centralized control with decentralized operations.<sup>84</sup> The logistics commander must retain positive C2 over subordinate organizations to maintain flexibility.<sup>85</sup>

Consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will provide increased service flexibility through asset visibility and maximizing depot warehouse storage assets. Improvements in asset visibility, through consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels create flexible logistic depot supply structures and procedures within all the services. These flexible structures can easily adapt to changing situations, missions, and concepts of operations by quickly drawing on the combined assets of the entire Armed Services class IX supply system at the strategic and operational levels. Then, the service item managers using decentralized operations can coordinate the most efficient and effective modes of transportation to distribute the required class IX repair parts to the requesting unit.

Second, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will reduce the amount of excess class IX repair parts stocks and support structures.<sup>86</sup> While consolidation of the services class IX repair parts management, supply and distribution systems under a single agency will result in some economic hardship by eliminating personnel associated with the services excess support structure and functions, it is the author's opinion that the impact will be minimal. Further, in a comparison of flexibility, the consolidation of the services current class IX repair parts management, supply and distribution systems under a single agency is far superior. The current service systems



significantly reduces flexibility by insuring unnecessary class IX repair parts and the support structures required to track, store, issue and distribute them. This reduces flexibility by requiring tactical level units to carry these unnecessary class IX repair parts. This problem reduces the options available to the commander by restricting freedom of movement and operational tempo from the additional logistical tail required to move these class IX repair parts.

Third and finally, consolidation of the services class IX repair parts systems for management, supply and distribution at the strategic and operational levels under a single agency would allow for positive C2 over the services class IX depot and retail supply organizations. This control, which is lacking in the services current class IX system will allow for maximum interservice flexibility to access all the services supplies and assets.

## ECONOMY

Economy is the fourth Principle of Joint Logistics. Economy is providing support at the lowest cost. At some level and to some degree, resources are always limited. When prioritizing and allocating resources, the commander must continuously consider economy.<sup>87</sup>

First, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency provides economy through asset visibility of all the services class IX repair parts inventories. Asset visibility, allows for interservice visibility and access to all the services class IX repair parts supplies within the strategic and operational repair parts depot and retail supply systems. By having asset visibility at the strategic and operational level, the services item managers can insure that no additional repair parts stocks are procured before those stocks already on hand are used. Once these repair parts are identified, the services class IX repair parts

item managers can then coordinate the most economical means of transportation to redistribute the repair part to the requesting service based on the priority need.

Second, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels will improve the economy of operations by significantly reducing the amount of excess repair parts stocks in the services. Elimination of these unnecessary class IX repair parts, and support structures associated to transport, track, store and issue these unnecessary repair parts will save billions of dollars for the DoD.<sup>88</sup>

Finally, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will improve economy by reducing the costs associated with separate service development and procurement of hardware and software used for management, supply and distribution of class IX repair parts at the strategic and operational levels.

## ATTAINABILITY

Attainability (or adequacy) is the next Joint Logistics Principle. Attainability, is defined as the ability to provide the minimum essential supplies and services required to start combat operations. The commander's logistic staff develops the concept of logistic support, completes the logistic estimate, and initiates resource identification based on supported commander's requirements, priorities, and apportionment.<sup>89</sup>

Consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency increases the ability to provide attainability through asset visibility of all the services class IX repair parts inventories. Asset visibility, enables all the services class IX item managers to identify those minimum essential class IX repair parts items from across the entire Armed Services

supply system at the strategic and operational levels. Then based on the repair parts identified inventory location and their geographic proximity to the requesting supply agency, item managers can use the most responsive mode of transportation to meet the supported commander's requirements, priorities, and apportionment.

Second, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels will improve attainability by significantly eliminating unnecessary repair parts assets and the costs associated to transport, track, store and issue unnecessary repair parts.<sup>90</sup> These savings would free these funds and tracking assets for use on attaining those high priority minimum essential class IX repair parts supplies and services required to begin combat operations.

Finally, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will improve attainability by eliminating the need for separate hardware and software systems at each service to control the management, supply and distribution of class IX repair parts. The elimination of different service architecture will reduce the amount of time required for human interface to attain cross service class IX repair parts, and coordinate transportation for movement of class IX repair parts between the services.

## SUSTAINABILITY

Sustainability is the sixth Principle of Joint Logistics. Sustainability measures the ability to maintain logistic support to all users throughout the theater for the duration of the operation. Sustainability is the greatest challenge for the logistician who must not only attain the minimum essential materiel levels to initiate combat operations (readiness), but must also sustain those operations.<sup>91</sup>

First, consolidation of all the services class IX repair parts management, supply and

distribution systems at the strategic and operational levels under a single agency will improve the entire Armed Services ability to maintain class IX repair parts supplies and services throughout the theater for the duration of the operation. By reducing the amount of excess class IX repair parts stocks and support structures required to track, store, issue and distribute them at the strategic and operational levels, the services class IX item managers can maximize their management, supply and distribution assets to sustain the required class IX repair parts.

Second, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency increases sustainability by providing asset visibility of all the services class IX repair parts inventories. Asset visibility will allow the services class IX item managers to use the broad supply base of the entire Armed Services supply system or civilian industry at the strategic and operational levels. This broad base will insure maximum sustainability of the class IX repair parts available to support operations, and identify early those class IX repair parts that require civilian industry procurement.

Third, as described by General (Ret.) Carter B Magruder, in his book Recurring Logistics Problems as I Have Observed Them, the rate of consumption of repair parts will vary considerably with usage, age and environment. This creates serious problems in sustainability through inaccurate forecasting and distribution.<sup>92</sup> Consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency allows for positive C2 over the services class IX depot and retail supply organizations. This control, which is lacking in the services current class IX system, will increase sustainability by insuring interservice access to all the services class IX repair parts management, supply and distribution assets and supplies.

## SURVIVABILITY

Survivability is the last Principle of Joint Logistics. Survivability is defined as the capacity of the organization or system to prevail in the face of potential destruction. Examples of military objectives for logistical targets include industrial centers, airfields, seaports, railheads, supply points and depots, lines of communication (LOCs), shipping, rail and road bridges, and intersections. Logistic units and installations are also high-value targets that must be safeguarded by both active and passive measures.<sup>93</sup>

First, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency improve survivability by reducing the logistical footprint of the services units required to support a theater of operation. Consolidation of the services class IX management, supply and distribution systems personnel and assets under one agency allows for tailoring of the Armed Services class IX repair parts supply system at the strategic and operational levels. This tailoring capability limits the number of units exposed to a hostile force, while still providing the required class IX repair parts support.

Second, consolidation of all the services class IX repair parts management, supply and distribution systems at the strategic and operational levels will significantly reduce the amount of personnel actually in theater required to transport, track store and issue unnecessary repair parts.<sup>94</sup> This reduction increases survivability by reducing the number of industrial centers, airfields, seaports, railheads, supply points, depots and, lines of communication to support operations. Additionally, those funds saved from the unnecessary repair parts expenditures could then be used to provide better equipment and weapons systems for logistical units to protect themselves during operations.

Third, consolidation of all the services class IX repair parts management, supply and

distribution systems by the services at the strategic and operational levels under a single agency will improve security. Consolidation will help reduce unnecessary exposure from multiple hardware and software systems that each service currently uses for the management, supply and distribution of class IX repair parts. This allows all the services better information flow of class IX repair parts management, supply and distribution information while reducing threats.

Fourth, consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency will improve survivability by increasing asset visibility and maximizing depot warehouse storage assets. Asset visibility creates flexible logistic depot and retail class IX repair parts supply structures and procedures within all the services. These flexible service structures can easily adapt to threats, destruction, changing situations and missions by quickly shifting support from within the entire Armed Services class IX supply system at the strategic and operational levels.

## SUMMARY

In this chapter, the Principles of Joint Logistics found in Joint Publication 4.0 were used to evaluate the impact of consolidation on the services class IX repair parts management, supply and distribution systems at strategic and operational levels under a single agency. The results of this evaluation are clear. Consolidation of the services class IX repair parts management, supply and distribution systems at strategic and operational levels under a single agency provides a more cost effective, efficient and responsive alternative to the current service systems. While the services and the officials interviewed for this monograph agree with this statement, most disagree that consolidation is in their services best interest.<sup>95</sup> As stated in the 1997 GAO report, the services feel that the

consolidation of the services class IX repair parts management, supply and distribution at the strategic and operational levels under a single agency offers too great a risk to operational effectiveness.<sup>96</sup> The services' official position of operational risk did have some support by a small percentage of the officials in the services class IX repair parts agencies at the strategic and operational levels and the students interviewed at the Command and General Staff College by this author. However, the official service position was not seen as a critical factor. The overwhelming concerns by the majority of officials and students were for loss of funding and jobs created by consolidation of the services class IX repair parts management, supply and distribution at the strategic and operational levels under a single agency.<sup>97</sup>

## **CHAPTER V**

### **CONCLUSIONS**

There is a time for everything, and a season for every activity under heaven: A time to be born and a time to die, a time to plant and a time to uproot, a time to tear down and a time to build, a time to embrace and a time to refrain, a time to keep silent and a time to speak, a time for war and a time for peace.<sup>98</sup>

(NIV) Ecclesiastes 3:1-8

#### **TIME AND SEASON**

The objective of this monograph was to determine whether consolidating the Armed Services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency would lead to a more effective and efficient repair parts system. While the specific details of consolidation were not addressed and remain for further analysis, it is clear that now is the time and the season to consolidate the service's class IX repair parts systems at the strategic and operational levels under a single agency. The logistical history, in the form of legislative and regulatory guidance since World War II has provided DoD both the ways and the means to make the required changes. As postulated to the services from the GAO Depot Consolidation Study in 1997, the question of "if consolidation is more effective and efficient" is no longer an issue. The onus now lies on the services to justify and determine their "mission liabilities." As the results from the monograph's evaluation using the Joint Principles of Logistics outlined in Joint Publication 4.0 clearly show, consolidation of services class IX repair parts systems at the strategic and operational levels under a single agency would dramatically reduce the service's mission liabilities. By avoiding the issue of consolidation and continuing to make improvements within their individual class IX repair parts systems at the strategic and operational levels,



the services are failing to seize the opportunity to change the structure problems inherent in the current separate service systems. Further, continued use of the current systems fail to take advantage of many additional benefits. First, consolidation will allow improvements in cost and control through the consolidation of several tasks under a single agency. These services include such small tasks as machine shop services, ground and air transportation carrier costs, facilities maintenance, security forces and equipment maintenance. This will allow the services more time and resources to focus on the core business of warfighting. Second, consolidation of a variety of functions currently found in the services under a single agency will produce a constant standard of quality, safety and management. The consistent control measures across the services will provide a more effective monthly and yearly cost reports in areas such as labor, maintenance, and materials to track performance. Finally, consolidation will provide cross-pollination of ideas from the services talent and experience that will help respond creatively to crises.

## RECOMMENDED CHANGES

Based on the analysis from this monograph, the author highly recommends the following changes to the services class IX repair parts distribution management, supply and distribution systems at the operational and strategic levels. First, the services should immediately establish the objective to consolidate all the services class IX repair systems responsible for the management, supply and distribution at the strategic and operational levels under a single agency. In agreement with the 1997 GAO Depot Consolidation Study, the author recommends that the Defense Logistics Agency (DLA ) assume responsibility for management of the services' wholesale and retail depot class IX repair parts stocks. Additionally, the author recommends that DLA assume the additional responsibilities of managing the integration of the services supply and distribution systems at the strategic and

operational levels. DLA currently provides the required services and the majority of functions for class IX consumables at the strategic and operational level. Transition of the class IX repairables to DLA would allow use of their trained personnel, expertise and capability of these missions while reducing the individual services systems, personnel, facilities and excess class IX repair parts stocks.

## SUGGESTIONS FOR FURTHER RESEARCH

Specific details of consolidating the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency were not addressed in this monograph and remain for further analysis. The author recommends the following areas for research consideration by those interested in this subject.

First, which one of the services current class IX repair parts systems used for management, supply and distribution at the strategic and operational levels is the most efficient and economical for all the services to use, or should a new system be developed?

Second, what is the impact of consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency on the services theater level class IX repair parts supply units?

Finally, the last question for research recommended by the author is, what is the impact of consolidation of the services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency on the services required force structure needed to accomplish class IX repair parts management, supply and distribution at the operational and tactical levels?

## SUMMARY

This monograph began with the thesis question of: Can consolidation of the Armed

Services class IX repair parts management, supply and distribution systems at the strategic and operational levels under a single agency create more effective and efficient class IX repair parts systems? The answer to this question is clearly yes. Consolidation offers the DoD and the services the opportunity to dramatically improve the class IX repair parts management, supply and distribution systems at the strategic and operational levels. However, the execution of this solution requires that the services adopt the view that “the needs of the many, outweigh the needs of the one.”<sup>99</sup>

## END NOTES

- <sup>1</sup>. Medows, Sandra I. "Logistics Loads Make Land Forces Too Slow for 21st Century Warfare." National Defense. Sept. 1997: p 19.
- <sup>2</sup>. Ehrlich, Eugene. Webster's Dictionary, Collins Gem New Edition, New York: Harper Collins Pub, 1990. p 127.
- <sup>3</sup>. Rubik, Erno "Rubik On-Line" (1998, 10 March: Rubik's Cube [On-line]. <http://www.rubiks.com/HOME.html>: p 1.
- <sup>4</sup>. Rubik, Erno "Rubik On-Line" (1998, 10 March): Rubik's Cube [On-line]. <http://www.rubiks.com/VRMEET.html>: p 1.
- <sup>5</sup>. Armed Forces Staff Publication 1, The Joint Staff Officer's Guide. Norfolk, Virginia: National Defense University Armed Forces Staff College, 1997. p 6-60.

CLASSES	SUPPLIES
I	Subsistence, gratuitous health and comfort items
II	Clothing, individual equipment, tentage organizational tool sets and kits, hand tools, administrative and housekeeping supplies and equipment
III	Petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquids and gases, bulk chemical products, coolants, deicer and antifreeze compounds, components and additives of petroleum and chemical products, and coal.
IV	Construction materials including installed equipment, and all fortification and barrier material
V	Ammunition of all types, bombs explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items.
VI	Personal demand items such as health and hygiene products (soap and tooth paste), writing material, snack food, beverages, cigarettes, batteries, and cameras (nonmilitary sales items).
VII	Major end items such as launchers, machine shops, and vehicles.
VIII	Medical material, including class IX repair parts peculiar to medical equipment.

IX	Class IX repair parts and components to include kits, assemblies and subassemblies (repairable and non-repairable) which are required for maintenance support of all equipment.
X	Material to support nonmilitary programs such as agriculture and economic development (not included in Classes I through IX).
Miscellaneous	Water, maps, salvage, and captured material.

<sup>6</sup>. Emahiser, James B (Assistant Deputy Undersecretary of Defense for Material and Distribution Management, to the National Security, International Affairs and Criminal Justice Committee, House Government Reform and Oversight Committee), (1997, 20 March). "Inventory Management Crucial to Mission Success" [On-line]. Defense Issues, Volume 12, Number 23, Available: Defense Link: [Mil/cgi-bin/multigate/retrieve?u=z3950r://ditcs14:1024/issues!F224](http://mil/cgi-bin/multigate/retrieve?u=z3950r://ditcs14:1024/issues!F224). p 1.

<sup>7</sup>. Mahan, Charles S. "Power Projection Logistics." The Director for Army Supply and Logistics briefing to the Command and General Staff Course. Fort Leavenworth, Kansas. 17 April 1997. p 3, 4. This brief was given to the Command and General Staff College to provide the current state and future issues for logistics in the Army. On pages 3, and 4 of the briefing slides Major General Mahan discussed the declining DOD and Army budget, and its negative impact on all supply issues to including class IX repair parts. In particular to class IX repair parts, he discussed the increasing financial costs associated with maintaining soldiers on active duty to handle the receipt, storage and issue of repair parts.

<sup>8</sup>. Emahiser, James B, "Inventory Management Crucial to Mission Success" [On-line]. Defense Issues, Volume 12, Number 23. p 1.

<sup>9</sup>. FM 100-16, Army Operational Support. United States Printing Office, Washington, DC: Department of the Army, May 1995. p 3-6.

<sup>10</sup>. Ibid.

<sup>11</sup>. Ibid p 3-7.

<sup>12</sup>. Badger, Oscar C. (Vice Adm., USN;) "Problems of Command and Logistics." Speech before the Industrial College of the Armed Forces; Washington, DC; November 18, 1949; Lutes, Leroy. (Lt. Gen., USA); "Logistics in Grand Strategy." Speech before the National War College; Washington, DC; February 13, 1950; Spector, Ronald H.; Eagle Against the Sun. New York, New York: Random House, 1985. p xiii, 28.

<sup>13</sup>. Ibid.

<sup>14</sup>. Gansler, Jacques S. (Undersecretary of Defense, Acquisition and Technology) (1998, 23) [On-line]. Higher Performance at Lower Cost: Transforming DoD Logistics U.S. Army Center for Strategic Leadership Carlisle Barracks, Pennsylvania. 14 January 1998. p 1. In this brief, the Undersecretary of Defense, Acquisition and Technology offered his perspective on Department of Defense logistics system. He stressed the need for the dramatic overhaul in the Department of Defense Logistics System. During the briefing, he provided an example from the private sector to explain some of the required reforms. "The same parts that Caterpillar delivers domestically in one or two days and overseas to 100 countries in two to four days (or they pay for them) took the DoD logistics system 40 to 60 days during the Persian Gulf conflict. What's more, Caterpillar does it with fewer people and far less inventory." They use a modern, global electronics network, for continuous and total asset visibility, and rapid, global transportation systems -- like FEDEX and UPS -- that reliably handle millions of overnight packages each day (compared with military requisitions that, at the height of Operation Desert Shield, reached 35,000 deliveries per day).

<sup>15</sup>. Kaminski, Paul G. "The Revolution in Defense Logistics." The Keynote Address of the Under Secretary of Defense for Acquisition and Technology at the 12th National Logistics Symposium and Exhibition. Alexandria, Virginia. 31 Oct. 1995. p 1.

<sup>16</sup>. Gansler, Jacques S. (Undersecretary of Defense, Acquisition and Technology) (1998, 23) [On-line]. Higher Performance at Lower Cost . p 1-3.

<sup>17</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: US Army Center for Military History, 1991. p 248.

<sup>18</sup>. Telephone interviews conducted by the author on 22 January, 17 February, 30 March, 4 April, and 12 April 1998. Interviews were done with over forty officials from the Defense Logistics Agency, Naval Support Command, Air Force Material Command, Army Material Command, Secretary of the Joint Logistics Commanders and representatives at the Policy and Plans Office of the Administrative Assistant to the Secretary of the Army. The questions from the author related to the consolidation of the services class IX repair parts management, supply and distribution under a single agency. To get the respondents interviewed to answer the authors questions, the author agreed to keep the identity of these officials' names or job titles confidential.

<sup>19</sup>. Ibid.

<sup>20</sup>. "Defense Logistics History," in Defense Logistics Homepage p 2, Richmond VA: (accessed 24 February 1998); available from <http://www.dla.mil/history.htm>.

<sup>21</sup>. Ibid.

<sup>22</sup>. Ibid. p 3.

<sup>23</sup>. Ibid.

<sup>24</sup>. "The Defense Supply Center Richmond Activities Performance Plan" Aug. 1996. The briefing was given to Deputy Randle D. Bales, SC USN Deputy Executive Director Supply Management and CAPT. Peter S. Eltringhim, SC USN Associate Executive Director Business Practice Reengineering Director Business Practice Reengineering. p 2-6. This plan was developed and briefed to explain the DLAs goals and objectives in management of consumables and nonconsumable supplies for the services.

<sup>25</sup>. Ibid.

<sup>26</sup>. "Joint Logistics Commanders Operating Procedures 1997." p 1-3. Wright Patterson AFB, OH.: (accessed 22 January 1998); available at <http://www.afmc.wpafb.af.mil/HQ-AFMC/DR/JLC.htm>.

<sup>27</sup>. Ibid.

<sup>28</sup>. Ibid.

<sup>29</sup>. Naval Supply Instructions 4790.7, Wholesale inventory management and logistics support of multiservice used nonconsumable items. United States Government Printing Office, Washington, DC: 27 April 1990. p 4.

<sup>30</sup>. Ibid p 5.

<sup>31</sup>. Ibid p 4.

<sup>32</sup>. Ibid p 5.

<sup>33</sup>. Ibid p 5.

<sup>34</sup>. United States Code Annotated, TITLE 10 USC, 1998 Supplementary Pamphlet., covering from 1984-1997, (St Paul, Minn.: West Publishing Company, 1998), p vii.

<sup>35</sup>. Ibid. chapter 4, p 32.

<sup>36</sup>. Ibid.

<sup>37</sup>. Ibid.

<sup>38</sup>. Naval Supply Instructions 4790.7, Wholesale inventory management and logistics support of multiservice used nonconsumable items. p 4.

<sup>39</sup>. Ibid. p 5.

<sup>40</sup>. Department of the Army Memorandum 10-1. (1993). Executive Agent Responsibilities Assigned to the Secretary of the Army. Washington, DC: United States Government Printing Office. p 4. The monograph author talked with a representative at the

Policy and Plans Office of the Administrative Assistant to the Secretary of the Army, 30 March, 4 April and 15 April to confirm this statement. The current DoD memorandum 10-1 signed in January 1998 has not yet been approved for release to distribution. However based on the phone conversation with representatives from the Policy and Plans Office of the Administrative Assistant to the Secretary of the Army 30 March and 4 April, they confirmed that executive agency assignment of this responsibility has been assigned under the 1998 memorandum.

<sup>41</sup>. "The Concept for Future Joint Operations." Joint Electronic Library. CD ROM. May 1997. Washington, DC: United States Government Printing Office. p 6-61.

<sup>42</sup>. Telephone interviews conducted by the author on 22 January, 17 February, 30 March, 4 April, and 12 April 1998. Interviews were done with over forty officials from the Defense Logistics Agency, Naval Support Command, Air Force Material Command, Army Material Command, Secretary of the Joint Logistics Commanders and representatives at the Policy and Plans Office of the Administrative Assistant to the Secretary of the Army.

<sup>43</sup>. Ibid.

<sup>44</sup>. Ibid.

<sup>45</sup>. Ibid.

<sup>46</sup>. Ibid.

<sup>47</sup>. Personal interviews conducted by the author at Fort Leavenworth, Kansas on 26 February, 5 March and 9 March 1998. Interviews were conducted with twelve logistics officers from all services, currently assigned to the Army Command and General Staff Officer Course who have worked with their services class IX repair parts systems at the strategic and operational levels. Each officer provided numerous examples of having to wait for class IX repair parts from their own supply system, while like class IX repair parts were shown as available in other services systems. To get the respondents interviewed to answer the authors questions, the author agreed to keep the identity of these students' names and past job titles confidential.

<sup>48</sup>. U.S. Army FM 100-10, Combat Service Support. Washington, DC: Department of the Army, 1994. p A-2.

<sup>49</sup>. Ibid. C-6.

<sup>50</sup>. Ibid. C-6.

<sup>51</sup>. Ibid. C-6.

<sup>52</sup>. Ibid. C-4.

<sup>53</sup>. Naval Doctrine Publication 4, Naval Logistics Operations, in Navy Logistics Homepage, p 12: (accessed 24 February 1998); available from



<http://ndcweb.navy.mil/Ndp4/ndp40005.htm>.

<sup>54</sup>. Ibid. p 1.

<sup>55</sup>. Ibid. p 4.

<sup>56</sup>. Navy PAFOS Manual, SUPPLY SUPPORT OVERVIEW, in Navy Logistics Support Command homepage, p 68: (accessed 24 February 1998); available from <http://ndcweb.navy.mil.fms0/NLSC.htm>.

<sup>57</sup>. Ibid.

<sup>58</sup>. Naval Doctrine Publication 4, Naval Logistics Operations, in Navy Logistics Homepage, p 12.

<sup>59</sup>. U.S. Army Command and General Staff Student Text 63-2, Combat Support at Echelons above Corps. Fort Leavenworth KS, July 1996. p B12.

<sup>60</sup>. Ibid.

<sup>61</sup>. Ibid.

<sup>62</sup>. Clarke, Ronald W. "Express: An Overview and Application for Redistribution Decision Support." Air Force Journal of Logistics Spring 1997. [On-line], p12. (accessed 2 March 1998); available from <http://www.mil.hq.af.mil/aflma/gi/Afjlhome.html>.

<sup>63</sup>. Air Force Journal of Logistics Volume XXI, Numbers 3 and 4. "USAF Logistics Policy Insight." [On-line] p 10. (accessed 2 March 1998); available from <http://www.il.hq.af.mil/aflma/gi/Afjlhome.html>; Personal interview conducted by the author on 30 March, 1998 with LTC Nate Wilson, Air Force Joint Doctrine Command and Mike Sells, Resupply Planning Office, Air Force Material Command. Author discussed during the interview the status of the Air Force emerging doctrine for management, supply and distribution of supplies to include class IX repair parts.

<sup>64</sup>. Personal Interview with LTC Nate Wilson, Air Force Joint Doctrine; and Christensen & Ewan, "An introduction to Repairable Inventory Models and Theory." Logistic Models and Policy Decisions. Air Force Logistics Management School, LOGM 595, Spring 1996. p 69 –71.

<sup>65</sup>. Christensen & Ewan, "An introduction to Repairable Inventory Models and Theory." Logistic Models and Policy Decisions.

<sup>66</sup>. Ibid.

<sup>67</sup>. Ibid.

<sup>68</sup>. Ibid.

<sup>69</sup>. Ibid.

<sup>70</sup>. Kaminski, Paul G, "Defense Total Asset Visibility Plan," [On-line], Joint Total Asset Visibility Homepage, p 6-6. (accessed 14 September 1997); available from <http://222.acq.osd.mil/log/mdm/tav/index.htm>.

<sup>71</sup>. United States General Accounting Office Report, "Defense Infrastructure - Inventory Control Point Consolidation Savings Would Be Substantial." Abstract NSIAD-97-157. Washington, DC: United States Government Printing Office, 1997. p 1.

<sup>72</sup>. Ibid.

<sup>73</sup>. Ibid. p 2.

<sup>74</sup>. Cohen, William. "Department of Defense Reform Plan," [On-line ], Department of Defense website. Chapter 16, p 1. (accessed 4 February, 1998); available from <http://www.dtic.mil/execsec/adr98/chap16.html>.

<sup>75</sup>. United States General Accounting Office Report, "Defense Infrastructure - Inventory Control Point Consolidation Savings Would Be Substantial." Abstract NSIAD-97-157.

<sup>76</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. 27 January 1995. Washington, DC: United States Government Printing Office. Section II, p 27.

<sup>77</sup>. Ibid.

<sup>78</sup>. Ibid.

<sup>79</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: U.S. Army Center for Military History, 1991. p 253-254.

<sup>80</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 27.

<sup>81</sup>. Ibid.

<sup>82</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: US Army Center for Military History, 1991. p 253-254.

<sup>83</sup>. Senge, Peter M. The Fifth Discipline. New York, NY: Currency Pub. 1990. p 89.

<sup>84</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 27.

<sup>85</sup>. Ibid.

<sup>86</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: US Army Center for Military History, 1991. p 253-254.

<sup>87</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 28.

<sup>88</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: US Army Center for Military History, 1991. p 253-254.

<sup>89</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 28.

<sup>90</sup>. Heiser, Joseph M. A Soldier Supporting Soldiers. Washington, DC: US Army Center for Military History, 1991. p 253-254.

<sup>91</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 28.

<sup>92</sup>. Magruder, Carter B. Recurring Logistics Problems as I Have Observed Them. Washington, DC: Center of Military History. United States Army, 1988. p 127.

<sup>93</sup>. Doctrine for Logistics Support of Joint Operations 4.0. Joint Electronic Library. CD ROM. p 28.

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<sup>98</sup>. Barker, Kenneth, ed., Donald Burdick., John Steel., Walter Wessel., and Ronald Youngblood. Holy Bible New International Version. Grand Rapids, MI: Zondervan Publishing, 1985. p 994.

<sup>99</sup>. Star Trek Movie: The Wrath of Khan. Paramount Pictures. 1993. 120 min.

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## INTERVIEWS

Telephone interviews conducted by the author on 22 January, 17 February, 30 March, 4 April, and 12 April 1998. Interviews were done with over forty officials from the Defense Logistics Agency, Naval Support Command, Air Force Material Command, Army Material Command, Secretary of the Joint Logistics Commanders and representatives at the Policy and Plans Office of the Administrative Assistant to the Secretary of the Army.

Personal interviews conducted by the author at Fort Leavenworth, Kansas on 26 February, 5 March and 9 March 1998. Interviews were conducted with twelve logistics officers from all services, currently assigned to the Army Command and General Staff Officer Course who have worked with their services class IX repair parts systems at the strategic and operational levels.

Personal interview conducted by the author on 30 March with LTC Nate Wilson, Air Force Joint Doctrine Command and Mike Sells, Resupply Planning Office, Air Force Material Command. Author discussed during the interview the status of the Air Force emerging doctrine for management, supply and distribution of supplies to include class IX repair parts.

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